

ZMI 7724 Laser Module

P/N's	DESCRIPTION
8070-0350-01	Laser module connects to up to 2 delivery modules

PHYSICAL CHARACTERISTICS	
Dimensions	See Figure
Weight	5.5 Kg
Nom. Cable Clearance	120 mm
Cooling Connectors	(2) G 1/8 ISO 228/1
Materials	Laser Module castings - Aluminum, cooling tubes - 304L Stainless Steel, cooling connectors - 316 Stainless Steel

ELECTRICAL	
Power Requirements (max)	+15 VDC $\pm 0.5V$ @ 2.1 A -15 VDC $\pm 0.5V$ @ 1.4 A -15 VDC inrush max 5 A for 20 msec
Heat Dissipation not removed by coolant	< 5 W

LASER CHARACTERISTICS	
Type	Helium-Neon, continuous wave, heterodyne
Output Power	≥ 1.42 mW per channel
Time from turn-on to wavelength stability	10 minutes typical @ $21.5 \pm 1.5^\circ C$
Time from turn-on to laser light	2 minutes max.
Mean Vacuum Wavelength	632.99070 nm Left channel: mean - 0.00044 nm Right channel: mean + 0.00044 nm
Mean Vacuum Wavelength, unit-to-unit variability	± 0.0005 nm
Wavelength difference between channels, unit-to-unit variability	± 0.0001 nm

LASER CHARACTERISTICS CONTINUED	
Vacuum Wavelength Stability (3σ)	± 10 ppb over laser lifetime, ± 0.5 ppb over 1 hour
DHHS Laser Safety Classification	Class IIIa, conforms to NCDRH regulations
IEC Laser Safety Classification	3R

ENVIRONMENTAL OPERATING CONDITIONS	
Operating Temperature	20 to $25^\circ C$
Temperature Variation in User Process	$\pm 1^\circ C$
Maximum Rate of Ambient Temperature Change	$2^\circ C$ per hour
Humidity	30 to 70% (non-condensing)
Atmospheric Pressure	700 to 1150 hPa
External Magnetic Field	< 0.5 mT

NON-OPERATING CONDITIONS	
Temperature Range	-20 to $60^\circ C$
Humidity	0 to 70% (non-condensing)
Shock	11 milliseconds 40G shock on each of three orthogonal axes (in ZYGO shipping container)

COOLING	
Active cooling with a user-supplied chiller is required to meet the specifications on this page.	
Coolant Type	compatible with ethylene propylene seals
Coolant Temperature Setpoint	20 to $23^\circ C \pm 0.1^\circ C$
Coolant Flow Rate	>0.5 and <4 liters per minute
Maximum Allowable Coolant Pressure	690 kPa (100 psi)

